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**BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES**

Application Number: 10/764,638
Filing Date: January 26, 2004
Appellants: BUDD ET AL.

William E. Lewis
For Appellant

EXAMINER'S ANSWER

This is in response to the appeal brief filed May 4, 2009 ("Brief"), appealing from the Office action mailed Oct. 3, 2008.

(1) Real Party in Interest

A statement identifying by name the real party in interest is contained in the brief.

(2) Related Appeals and Interferences

The examiner is not aware of any related appeals, interferences, or judicial proceedings which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

(3) Status of Claims

The statement of the status of claims contained in the brief is correct.

(4) Status of Amendments After Final

The appellant's statement of the status of amendments after final rejection contained in the brief is correct.

(5) Summary of Claimed Subject Matter

The summary of claimed subject matter contained in the brief is correct.

(6) Grounds of Rejection to be Reviewed on Appeal

The appellant's statement of the grounds of rejection to be reviewed on appeal is correct.

(7) Claims Appendix

The copy of the appealed claims contained in the Appendix to the brief is correct.

(8) Evidence Relied Upon

6,034,653	Robertson et al.	3-2000
6,452,572	Fan et al.	9-2002

(9) Grounds of Rejection

The following ground of rejection is applicable to the appealed claim:

Claim 1 is rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 6,034,653 to Robertson et al. ("Robertson") in view of U.S. Patent No. 6,452,572 to Fan et al. ("Fan").

As to claim 1, Robertson discloses a compact head mounted virtual display unit in FIG. 15, the unit comprising: a microdisplay; an optical system for directing an image signal for viewing by a user, the image signal being generated in accordance with the microdisplay; an optical system mounting structure for supporting the optical system within the field of view of only a single eye of the user; and a housing to substantially contain at least the optical system, wherein the image signal is viewed by the user together with background light entering the optical system (Robertson, col. 8, ll. 10-25).

Robertson does not disclose expressly a slidable opaque light shield, integrated within the housing and having an open position and a closed position, wherein the opaque light shield is slidable along a length of an exterior wall of the housing and slidably positioned with respect to the optical system such that, in the open position, the image signal is viewed by the user together with background light entering the optical system, and in the closed position, the image signal is viewed by the user with background light blocked from entering the optical system and thereby eliminated, as claimed.

Fan discloses a compact head mounted image display unit in FIGS. 49 and 54, the unit comprising: a microdisplay, an optical system for directing an image signal for viewing by a user, a housing to substantially contain at least the optical system, and a slidable light shield, integrated within the housing and having an open position and a closed position, wherein the opaque light shield is slidable along a length of an exterior wall of the housing and slidably positioned with respect to the optical system (Fan, col. 22, ll. 50-61; see also col. 23, ll. 40-46). The opaque slidable light shield serves to protect the optical system components from damage (Fan, col. 23, ll. 44-46).

Although Fan discloses the opaque light shield being provided on the front-end of the optical system (i.e., the end closest to the user's eye) (Fan, FIG. 54), examiner respectfully submits that it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the compact head mounted virtual image display unit of Robertson such that a slidable opaque light shield was provided, as taught by Fan, but at the back-end of the optical system (i.e., the end farthest from the user's eye). As one of ordinary skill in the art would appreciate, the suggestion/motivation for doing so would have been to protect the back-end of the transmissive optical display system since the back-end of the optical system in Robertson is suspect to mechanical damage when exposed, which is the problem solved in Fan (Fan, col. 23, ll. 44-46).

Thus, Robertson as modified by Fan teaches/suggests that when the slidable opaque light shield (i.e., at the back-end of the optical system) is in the open position, the

image signal is viewed by the user together with background light entering the optical system (Robertson, col. 8, ll. 10-25), as claimed.

Moreover, examiner respectfully submits that Robertson as modified by Fan teaches/suggests that when the slidable opaque light shield (i.e., at the back-end of the optical system) is in the closed position, the image signal is viewed by the user with background light blocked from entering the optical system and thereby eliminated, as claimed, since Robertson suggests that the image signal may be created and thus viewed by an internal light source (Robertson, col. 8, ll. 10-25).

Furthermore, because the generation of the image signal to be viewed by the user is independent of background light entering the optical system in Robertson, examiner respectfully submits that there is a reasonable expectation that when the slidable opaque light shield (i.e., at the back-end of the optical system) is in the closed position, the image signal is viewed by the user with background light blocked from entering the optical system and thereby eliminated.

(10) Response to Argument

Appellant argues that rather than disclosing a light shield, the relied upon portion of Fan (e.g., col. 23, ll. 40-46) discloses a “protective shade 1102 [that] can be raised or lowered to protect the display panel 1000, the viewing lens 1150 and other internal components from damage” (Brief, p. 4).

However, examiner respectfully submits that one of ordinary skill in the art would appreciate that when the protective shade 1102 is lowered to protect the display panel 1000, light is at least partially blocked from entering/exiting the display panel 1000 as can be seen from FIG. 54 of Fan. Thus, although the primary purpose of the protective shade 1102 in Fan is to protect internal components from damage, examiner respectfully submits that it also functions as a light shield, as claimed.

Appellant argues that rather than having a closed position wherein an image signal is viewed by the user with background light blocked from entering the optical system and thereby eliminated, as recited in claim 1, the protective shade in Fan completely covers a display in a display housing when closed, such that when the protective shade is in the closed position, anything displayed in the optical system cannot be seen (Brief, p. 4).

When Fan is taken alone, examiner acknowledges that this is true. However, the rejection of claim 1 discusses and articulates that although Fan discloses the opaque light shield being provided on the front-end of the optical system (i.e., the end closest to the user's eye) (Fan, FIG. 54), examiner respectfully submits that it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the compact head mounted virtual image display unit of Robertson such that a slidable opaque light shield was provided, as taught by Fan, but at the back-end of the optical system (i.e., the end farthest from the user's eye). As one of ordinary skill in the art would appreciate, the suggestion/motivation for doing so would have been to protect the back-end of the transmissive optical display system since the back-end of the optical system in Robertson is suspect to mechanical damage when exposed, which is the problem solved in Fan (Fan, col. 23, ll. 44-46).

Thus, Robertson as modified by Fan teaches/suggests that when the slidable opaque light shield (i.e., at the back-end of the optical system) is in the open position, the image signal is viewed by the user together with background light entering the optical system (Robertson, col. 8, ll. 10-25), as claimed.

Moreover, examiner respectfully submits that Robertson as modified by Fan teaches/suggests that when the slidable opaque light shield (i.e., at the back-end of the optical system) is in the closed position, the image signal is viewed by the user with background light blocked from entering the optical system and thereby eliminated, as claimed, since Robertson suggests that the image signal may be created and thus viewed by an internal light source (Robertson, col. 8, ll. 10-25).

Furthermore, because the generation of the image signal to be viewed by the user is independent of background light entering the optical system in Robertson, examiner respectfully submits that there is a reasonable expectation that when the slidable opaque light shield (i.e., at the back-end of the optical system) is in the closed position, the image signal is viewed by the user with background light blocked from entering the optical system and thereby eliminated.

Appellant argues, referring to column 7 lines 45-55 and FIG. 14 of Robertson, that shutter 310 may be used “to filter or substantially prevent or occlude distractions to the non-participatory eye of the viewer looking through display device 10,” and which may “be open allowing light and other distractions to the non-participatory eye or partially or completely closed to filter out light or such distractions” (Brief, p. 4). Appellant then argues that contrary to the language of claim 1, the position of the shutter taught by Robertson has no effect on the amount of background light entering the display pod since the shutter and the display pod are positioned in front of different eyes, as shown in FIG. 14 of Robertson.

However, FIG. 14 of Robertson has not been relied upon in rejecting claim 1. Rather, FIG. 15 of Robertson was relied upon in rejecting claim 1. Furthermore, the final Office action mailed Oct. 3, 2008, acknowledges that Robertson does not disclose expressly a light shield (e.g., shutter), as claimed. The disclosure of Fan was replied upon to cure this deficiency.

Appellant argues that Fan teaches directly away from the proposed modification of Robertson which is to position the opaque light shield at the back-end of the optical system (i.e., the end farthest from the user's eye) because rather than teaching or suggesting the use of any light shield, Fan in fact discloses an alternative arrangement wherein the amount of background light permitted to enter a display is regulated by

altering the material from which a front housing section is formed (Brief, p. 5). Furthermore, appellant argues that Robertson likewise teaches away from the claimed arrangement by teaching the use of a shutter to regulate the amount of background light permitted to enter the non-participatory eye, rather than the amount of light permitted to enter an optical system.

However, examiner respectfully emphasizes that when Robertson is modified in view of Fan, the rejection of claim 1 articulates that implementation of Fan's protective shade 1120 into the compact head mounted virtual image display unit of Robertson is solely to **protect the back-end of the transmissive virtual image display unit from mechanical damage** since the back-end of the optical system in Robertson is suspect to mechanical damage when exposed, which is the problem solved in Fan (Fan, col. 23, ll. 44-46). Thus, any disclosure of Fan's or Robertson's suggested manner of filtering background light not material to the proposed combination as detailed in the rejection of claim 1. One of ordinary skill in the art would appreciate the benefits of including Fan's protective shade at the back-end of Robertson's transmissive virtual image display unit to **safeguard against mechanical damage**.

Furthermore, examiner respectfully submits that one of ordinary skill in the art would appreciate that when the protective shade 1102 is lowered to protect the display panel 1000, light is at least partially blocked from entering/exiting the display panel 1000 as can be seen from FIG. 54 of Fan. Thus, although the primary purpose of the protective shade 1102 in Fan is to protect internal components from damage, examiner respectfully submits that it also functions as a light shield, as claimed.

(11) Related Proceeding(s) Appendix

No decision rendered by a court or the Board is identified by the examiner in the Related Appeals and Interferences section of this examiner's answer.

For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,

/Alexander S. Beck/
Examiner, Art Unit 2629

Conferees:

/Sumati Lefkowitz/
Supervisory Patent Examiner, Art Unit 2629

/Amr Awad/

Supervisory Patent Examiner, Art Unit 2629